Supporting Information

Paper-based Human Neutrophil Elastase Detection Device for Clinical Wound Monitoring

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Other supplementary materials for this manuscript include the following:

Movies S1 to S3

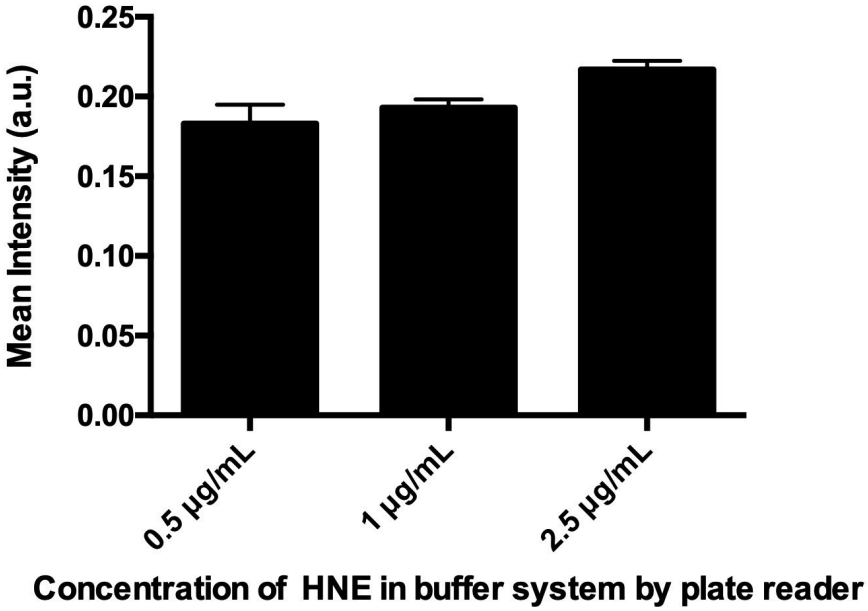

Fig. S1. The colorimetric intensity of human neutrophil elastase (HNE) concentration in a buffer system as detected by plate reader. (mean±SD, n=3)

Fig. S2. Pictures of patient wound sites. Left column represents pictures of acute wounds and right column represents pictures of chronic wounds. Patient information can be found in Table 2 of the main text.

Table S1. The intra-assay coefficient variation value for HNE in a tear system.

Conc. (μg/mL)	Mean Intensity of HNE (a.u.)						Average	SD	CV(%)
	1st	2nd	3rd	4th	5th	6th			
25	45.90	50.27	56.82	53.46	50.39	49.99	51.14	3.36	6.57
10	49.67	41.31	47.20	46.24	48.34	52.59	47.56	3.45	7.25
5	27.20	25.75	25.90	22.91	27.89	28.08	26.29	1.75	6.66
Average									6.83

Table S2. The inter-assay coefficient variation value for HNE in a tear system.

Conc. (μg/mL)	Mean Intensity of HNE (a.u.)			Average	SD	CV(%)
	1st	2nd	3rd			
25	51.14	58.34	44.85	51.44	6.63	12.89
10	47.56	52.28	40.50	46.78	6.71	14.34
5	26.29	32.13	33.71	30.71	4.96	16.15
Average						14.46

Movie S1. The different absorption properties of Whatman filter paper (left) and chromatography paper (right) for HNE detection in buffer system. Each of the reaction zones contain 3 μL pNA and 3 μL HNE.

Movie S2. Demonstration of the paper device prototype for HNE detection in a buffer system.

Movie S3. Demonstration of the PEDD for actual clinical usage.